DWPC - Emergency Report
Field Operations Section

File American Cyanamide Region II Basin Des Plaines

Reported by Bill Burns Received By ERU Date & Time 4/14/83

Address Joliet, Illinois

Phone # 815-722-6671

Material Spilled Impound water contained alum - solution

Quantity 360,000 gals.

Date & Time April 13, 6:00 P.M. to April 14, 7:00 A.M.

Effect on Stream

No adverse effect

		Notified	Date & Time
FOS	217/782-5620		
EAC	217/782-3637		
USEPA - C	312/353-6188		
E	812/464-2166		
M. & M.	217/782-6791		
D. of fish	217/782-6424		
U.S.C.G.	800/424-8802		
Other			

Environmental Protection
State Liaison

Source American Cyanamide Source Official & Title William J. Burns Plant Supt.

Address 1306 Mc Kinley Ave. Joliet, Telephone # (815) 722-6671

County Will TWP Range

Stream or Lake Sugar Creek - tributary to Des Plaines River

Directions

Action Taken & Comments On April 13, 1983 approximately 6:P.M., two six (6) inch transit pipe lines were ruptured (sketch attached). As a result of it impound #4 started draining in impound #3. Since impound #3 was nearly full with alum-mud, it rapidly filled and overflow its dikes in several areas running into plant stream which flows into Sugar Creek tributary to Des Plaines River.

6/14/83 - At the time of visit the breeches in the dike wall were observed dammed and all impound water was contained. No evidence of fish-kill were noted downstream.

Water was flowing heavy in Sugar Creek due to previous rain. Effect of the spill noted negligible.
No traces of alum-mud and/or aluminum precipitates were observed downstream.

Jeff Pederson from Coast Guards, Dale Burcket from D.O.C., and a representative from the State Police - District V - Headquarters inspected the facility.

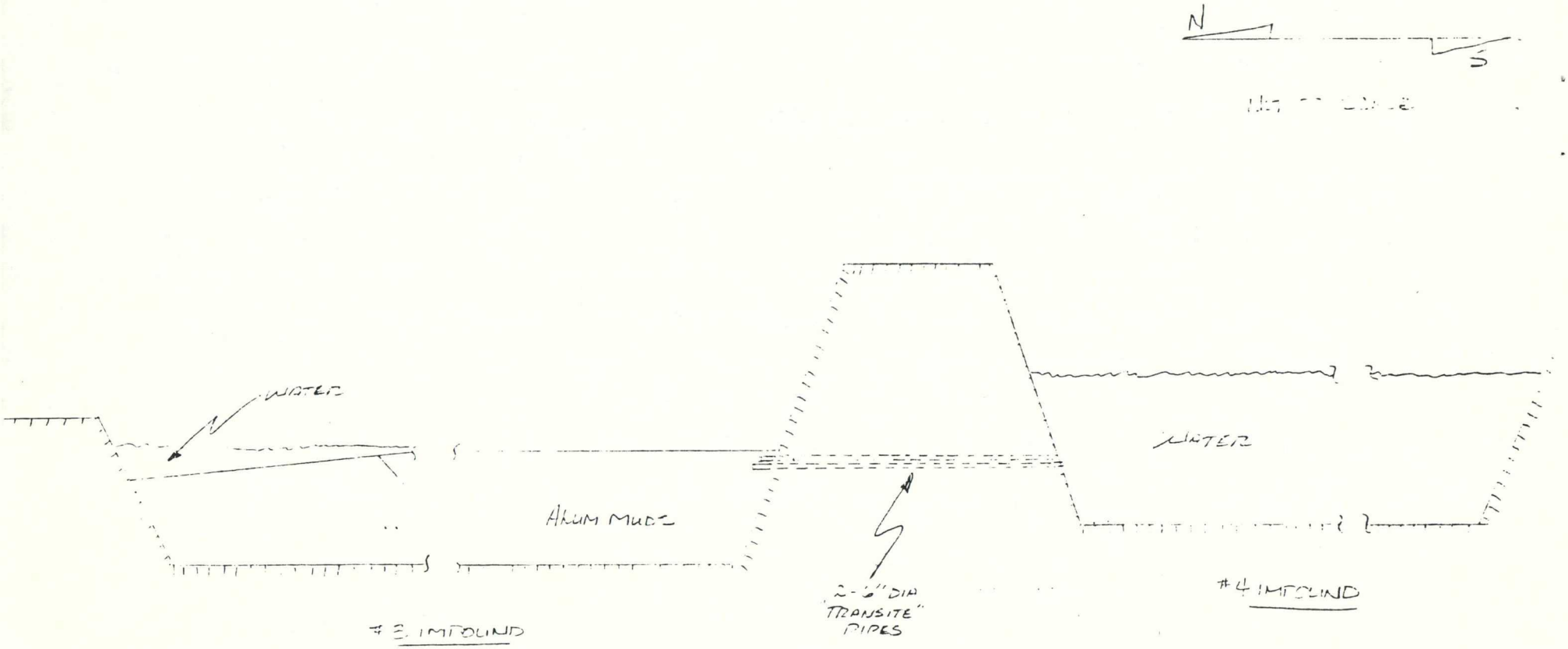
Transit pipes were temporarily sealed at the time and later on May 3, 1983 during follow-up visit was reported sealed permanently.

For the details of the incident see attached report from the facility.

Jay Patel
Environmental Protection Engineer

JP:wn

CC - DWPC/FOS/RU
- ERU



SKETCH - IMPOUND PROFILE

Xe - G.G. - Tor
- 6/17/83

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY (1)

SPECIAL ANALYSIS FORM 04305 APR 14

Time Collected 1:00 P.m. Sub-Basin Sugar Creek / Des Plaines

Date Collected 4-14-83. Collector [illegible] / Bill P.

Facility Name: American Cyanamid Corp Facility Number: File Town Joliet

Stream Name(s) Stream Code:

Source of Sample: (Exact Location)

Samples were collected at North West Corner of Impound #3. (where overflow occurred) from

Physical Observations, Remarks:

Flow	Field Dissolved Oxygen	Field pH	Field Temp.

0.003	Arsenic		Coliform/100ml		BOD
0.0	Barium		Fecal Coliform 100 ml	23	COD
	Boron		Fecal Strep 100 ml		TS/EC
0.00	Cadmium		Algae (Total) /ml		Susp.Solids
0.02	Copper	0.09	Ammonia (N)		Vol.Susp.Solids
0.08	Chromium (tri)		Organic Nitrogen (N)	4.1	pH (units)
0.00	Chromium (hex)		Nitrate + Nitrite(N)		Turbidity (JTU)
17.9	Iron (Total)	1.7	Phosphorus (P)		Hardness
	Iron (Dissolved)		Chloride		Alkalinity
0.05	Lead		Fluoride		Total Acidity
8.5	Manganese	9,600	Sulfate		Free Acidity
	Mercury (ppb)	0.00	Cyanide		Oil
0.3	Nickel		MBAS		Other (Specify)
0.001	Selenium		Phenol (ppb)		
0.07	Silver				
1.0	Zinc				

Results in mg/l unless otherwise noted.

Transported by: [illegible]

Received by:

Transported by:

Received by:

FOR LAB USE ONLY

Lab Number C004305 Rec'd by: [illegible]

Date sample rec'd: 4-14-83 Time 3:15

Date analysis completed:

Date results forwarded: JUN -6 1983

Total Tests requested: Tests run:

Lab Section Chemistry Supv. [illegible]

Recycled Paper

[illegible]2-0546

CYANAMID

American Cyanamid Company
Industrial Products Division
P.O. Box 2877
1306 McKinley Ave.
Joliet, IL 60434
(815) 722-6671

June 20, 1983

Illinois Environmental Protection Agency
1701 S. First Street
Division of Water Pollution Control
Maywood, Illinois 60153

SUBJECT: SPILL REPORT

ENCL. (1) Sketch - Profile of #3 and #4 Impounds
(2) Statement by Mr. J. Alessio
(3) Statement by Mr. E. Talbott

LOCATION: AMERICAN CYANAMID COMPANY
1306 McKinley Avenue
P.O. Box 2877
Joliet, Illinois 60434

DATE AND TIME: Approx 6:00 P.M., 13 April 1983 until
6:30 A.M., 14 April 1983

MATERIAL SPILLED: ALUMINUM SULFATE SOLUTION, DILUTE
2.05° Baume @55° F
1.0144 Specific Gravity @55° F
pH - 4
$AL_2(SO_4)_3 \cdot 14H_2O$ concentration $\cong$ 0.22 lbs per gal.
or 0.026 grams/ml
Weight/Gal (as is) $\cong$ 8.44 lbs/gal.

QUANTITY: 360,000 Gallons

Surface area of #4 Impound $\cong$ 97,000 sq. ft.
Change in Water level = 6 Inches
$(97{,}000\ Ft.^2)\ (0.5\ Ft)\ (7.48\ Gal/Ft^3) = 362{,}780\ Gal.$

CAUSE: The cause of the spill was a result of two six(6) inch transite pipe lines extending through the dike wall separating #3 and #4 impounds. Present operating personnel were unaware of their existence. The lines were apparently not properly sealed off, when their use was discontinued 10 to 15 years earlier. The lines gave way on the evening of 13 April 1983 draining #4 impound into

CAUSE: (contd.)

#3 impound. Since #3 impound is nearly full with alum muds, it rapidly filled and overflowed its dike walls in several areas, running into the plant stream, which flows into Sugar Creek, which in turn flows into the Des Plaines River.

EFFECT ON STREAM:

During the spill, the plant stream was sampled for ph and at no time did it drop below 5. There was and continues to be no visible evidence of harm to fish and wildlife from the spill site downstream to Sugar Creek and the Des Plaines River. Not having an adverse impact downstream of the spill site can be attributed to both the weak or dilute concentration of the impound water itself and further dilution by high flow rates in the waterways due to excessive rainfall earlier in the week.

ACTION TAKEN:

A neighbor called the plant sometime between 6:30 and 7:00 P.M. on 13 April 1983, to report flooding on plant property. The neighbor also called a local contractor who has been providing maintenance services to the plant for several years. Cyanamid operators on duty called out a millwright. The Contractor, Mr. Alessio and one of our millwrights, Mr. Talbott, arrived at about 7:30 P.M. The operators on duty at the plant shut down their production processes and proceeded to help stop the overflow of #3 impound. By 8:30 P.M. the flooding had been stopped temporarily by the men. I arrived home at 8:30 P.M, and upon receiving a call, proceeded directly back to the plant having left at 5:30 P.M. to attend to personal business.

Upon arriving at about 8:45 P.M., I immediately inspected the impounds to determine the cause of the problem. At about 9:00 P.M. we discovered two (2)-six (6) inch lines, which were previously buried and unknown to operating personnel extending through the dike wall separating #3 and #4 impound (see attached sketch, Encl. (1), and flowing impound water from #4 impound to #3 impound. #3 Impound began to overflow again at about 9:30 P.M. due to the flow from #4 impound. In order to minimize the flooding damage, the overflow from #3 impound was directed into the plant stream, while repeated efforts were made to plug the two-six inch transite lines. By 11:00 P.M., one of the six inch lines was partially plugged; efforts continued all through the night to plug the other. At 11:15 P.M. a contractor, Leak Repairs, Inc., who specializes in plugging sealing lines, was called to help stop the flow. Their crew arrived at 1:00 A.M. and determined that they could not stop the flow. At 2:00 A.M., Advance Valve was called to see if they could possibly stop the flow, and subsequently determined that they could not help. In the meantime, plant personnel with the help of Mr. Alessio were continuing their efforts to plug the lines. An attempt at 3:00 A.M. to seal the lines from the waterside with a tarp failed.

ACTION TAKEN: (contd).

At this point, I returned to the office and at 3:30 A.M. 14 April 1983, I called the National Response Center (POl Plowman) in Washington D.C. to report the spill in progress, and stated that it was still not under control. The Illinois EPA and U.S. EPA Region V were not available until 7:00 and 7:05 A.M. respectively. The U.S. Coast Guard's Marine Safety Office dispatched an inspector, Petty Officer Jeff Pedersen, who arrived on the scene at 5:30 A.M.. By this time, plant personnel had fabricated an end cap for one of the 6" transite lines along with 9' X 13' tarp suspended inside an angle iron frame. The tarp with frame was lowered into the water in an effort to slow or plug off the flow of water from #4 to #3 impound. It failed to stop the flow, but did slow it down enough to install the fabricated end cap. By 6:00 A.M. 95% of the flow had been stopped. By 6:30 A.M.,the breeches in the dike wall were dammed and all impound water contained. Since that time, no further discharge of impound water has occurred. Another end cap was fabricated later in the morning and installed on the line that was partially plugged the night before. Portable pumps were placed to dewater #3 impound back to #4 impound since one of the lines continued to leak at a low rate.

The Coast Guard Inspector having observed that the spill had been stopped and subsequent small leakage under control, departed at 7:00 A.M. returning at about 9:30 A.M. to check on our progress with controlled pumping.

At 7:00 A.M., the Illinois EPA was notified; a verbal report of the spill was given to Mr. Jack Bernett of the Illinois Emergency Response Unit. At 7:05 A.M., the U.S. EPA Region V was notified; a report of the spill was apparently not required, since details would be forwarded via the U.S. Coast Guard.

At about 8:30 A.M., the Illinois State Police, District V Headquarters Hazardous Materials Section arrived to inspect the spill site, and departed after observing that the incident was under control.

The Illinois EPA arrived at about 10:30 A.M. to inspect the site (Mr. J. Patel and Mr. W. Papodakis).

The Illinois Department of Conservation arrived at about 12:00 Noon to inspect the site for fish and wildlife kills.

The site was then reinspected by IEPA representatives and Department of Conservation representatives. The situation was observed to be under control with no discharge of impound water to downstream waterways. No evidence of fish or wildlife destruction was observed.

On 5/3/83 at about 1:00 P.M., Mr. J. Patel of the IEPA returned for a follow up inspection of the spill site.

ACTION TAKEN: (cont'd)

On Friday, 4/15/83, after temporarily sealing the two six inch transite pipes, Leak Repairs, Inc. was again called in to attempt a permanent seal, but failed. Since the lines did not have a permanent seal, the number of inspections were increased to a minimum of once every four hours. And since there was still a minor leak on one of the lines, a portable gas pump was used to transfer the water collected in #3 impound back to #4 impound (the pump would run approx 1½ hours per tank full of gas). So actually the inspection frequency was more often than once every four hours. Plant production was halted from the initial spill until Monday morning, 4/18/83. All employees were assigned to cleaning up the site including reinforcing the diking after gaining control of the spill at 6:30 A.M. on 4/14/83. Rain during the weekend and week of 4/18/83 negated the use of heavy equipment for major dike wall repair until 4/25/83. By May 6, 1983, repairs were completed on the dike walls.

On Monday 4/25/83, a diver was successful in sealing the two six inch transite lines with an inflatable plug. Afterwards, the lines were permanently sealed with a quick setting, non-shrinking cement.

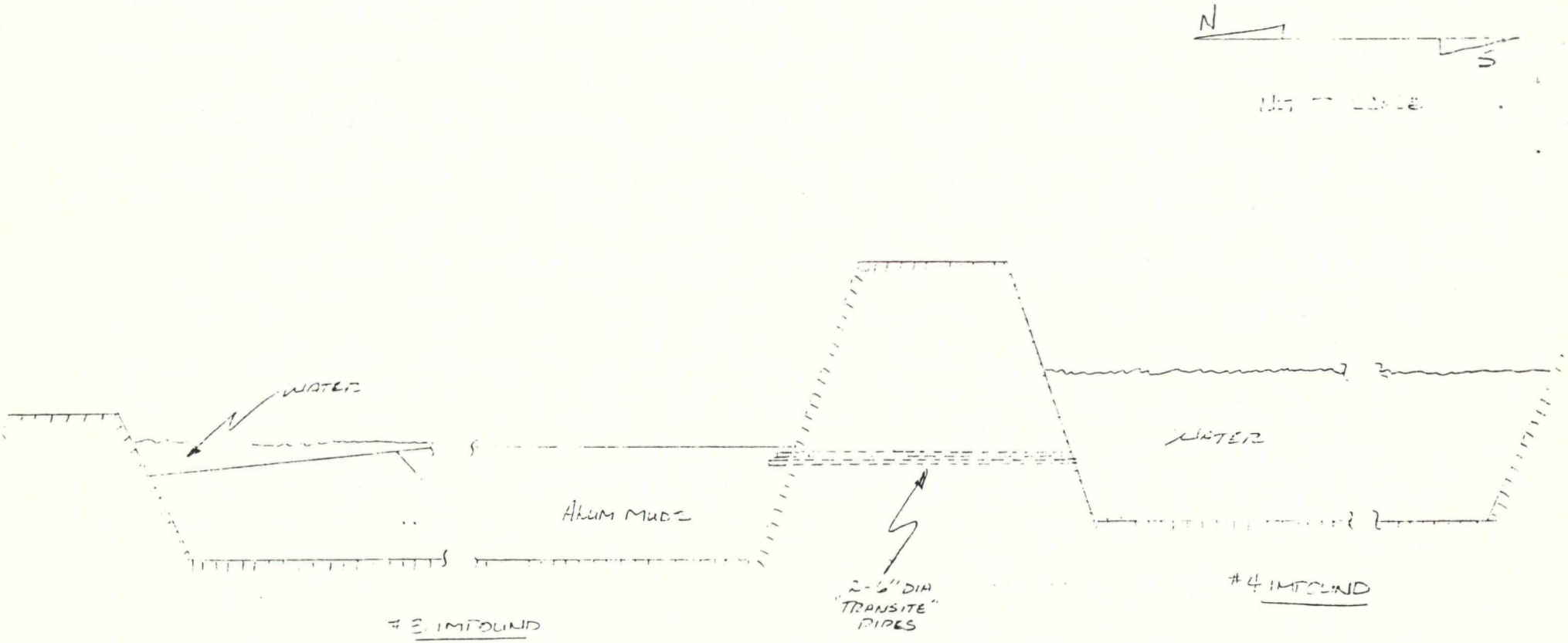
In conclusion, rainfall during the month of April was not a factor in the cause of the overflow of #3 impound. The cause was due to two six inch transite lines running through the dike wall of #4 impound, unknown to present operating personnel, which gave way and drained #4 impound into #3 impound. Plant personnel with the aid of outside contractors labored all through the night in order to achieve a temporary seal and gain control of the incident at 6:30 A.M. on 14 April 1983. As of 25 April 1983, the lines have been permanently sealed. As of 6 May 1983, repairs to the dike walls of #3 impound have been completed. Since gaining control of the incident, there has not been any discharge of impound waters to surrounding waterways. Nor has there been any evidence of fish or wildlife degradation. Under the circumstances, I do believe that the actions taken to stop this spill were prudent and will prevent a reoccurrence of this incident in the future. If I can be of any further service in clarifying this statement about the spill, please let me know.

Very truly yours,

William J. Burns
Plant Superintendent

WJB/jr

cc: Will County Health Dept.
Illinois State Police
Dept. of Conservation
B. S. Clark
file



SKETCH - IMPOUND PROFILE

ALESSIO & SONS CO.

725-5513
725-3223

RICHARDS ST. & MANHATTAN RD. JOLIET, ILLINOIS 60433

April 23, 1983

American Cyanamid
P.O. Box 2877
Joliet, IL 60434

Re: Report on accident
at American Cyanamid

Attn: William Burns

To whom it may concern,

This letter is concerning the overflow accident which occurred 4/13/83 at American Cyanamid. I received a phone call at 7:00 p.m. informing me that the water in pond #3 was just about to leave its banks.

I arrived at the plant at 7:30 p.m. then we checked pond #3 which at this time had left its banks. At this time, we proceeded to stop the water from going over its banks. William Burns, plant manager, arrived soon afterwards and walked the entire pond #3. When he returned, to our surprize he told us that water from pond #4 was entering pond #3 through two old transite pipes. I have worked in and out of the American Cyanamid plant for the last 8 years and never notice or was aware of those pipes existing from pond #4 to pond #3. We were able to plug 1 of the 2 pipes very fast with a traffic cone and then state it off. The second pipe was a real problem to plug. Mr. Burns then called a contractor from Leaks Inc.

They also were unable to plug off the line.

We started to make a frame with a tarp, which was bolted to the frame. When we finished the tarp, we carried it to pond #4 and tried to plug off the line with the tarp by using the water pressure. The tarp did not seal the pipe completely, however, it did cut down the amount of water which was passing through. We then made up a 6" pipe nipple with a flange and clamped it to the existing 6" pipe. After this was completed, we worked a blind flange in position and bolted it to the flange of the 6" nipple.

At this point, both pipes were not completely sealed however, very little water was leaking through. Now, with the condition under very good control I left and employees of American Cyanamid finished the work.

Sincerely,

James N. Alessio

JNA/ca

April 27, 1983

American Cyanamid
Joliet, Illinois

Attn: Mr. William Burns

Re: Water run-off from #3 Impound

To Whom It May Concern:

I was called by one of the operators about 7:10 p.m. on April 13, 1983 and asked to come to the plant. Because of very heavy rains that day, water was about to go over the top of #3 Impound.

I arrived at 7:30 p.m. and met with Mr. Alessio of Alessio & Sons, Joliet. We then proceeded to #3 Impound and along with two other American Cyanamid employees built a temporary bank to stop the over-flow of water.

William Burns, Plant Manager, arrived and we then made a complete inspection of #3 Impound. Mr. Burns found two 6" transite pipes which were bringing water from #4 Impound into #3, causing the over-flow. The existence of these pipes was unknown to us before this incident.

At this point, it was a very awkward situation because there was no known way of stopping the flow as there were no valves or shut-off systems connected to these pipes. Neither were there threads on the pipes nor was there a way of connecting any thing to the pipes which would stop the flow.

We then tried to insert a 6" pipe plug, however the I.D. was too small to accept the plug. Next we stuffed a traffic cone in one of the pipes and this slowed the flow of water through one of the pipes.

Mr. Burns contacted a specialist from Leaks, Inc. of Alsip, Illinois. While wating for this specialist, we attempted to fabricate something which would stop the leak. When the specialist arrived, we returned to the site and inspected the lines. The specialist indicated there was nothing he could do with the leak until the flow of water was diminished to a trickle. The man from Leaks, Inc. then left the property.

A 10' x 15' canvas tarp was placed on a frame and put into the water of #4 Impound. The tarp was drawn into the pipe by the current of the water and helped to block the flow of water through the pipes.

We fabricated a 6" nipple with a flange and a 6" pipe clamp and a blind flange. This unit was used to stop the flow of water in the second

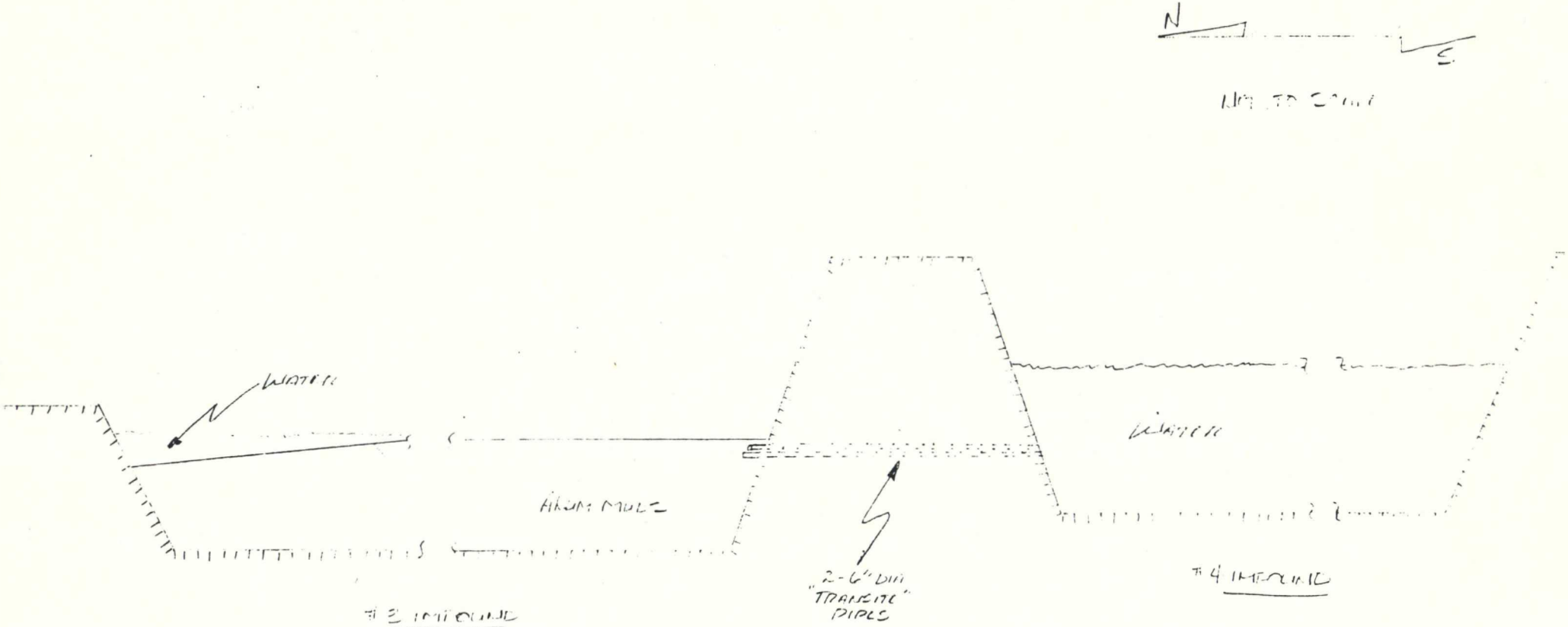
pipe, temporarily solving the problem.

At daybreak, the storm had subsided and we were then able to fabricate another clamp unit and secure the other pipe.

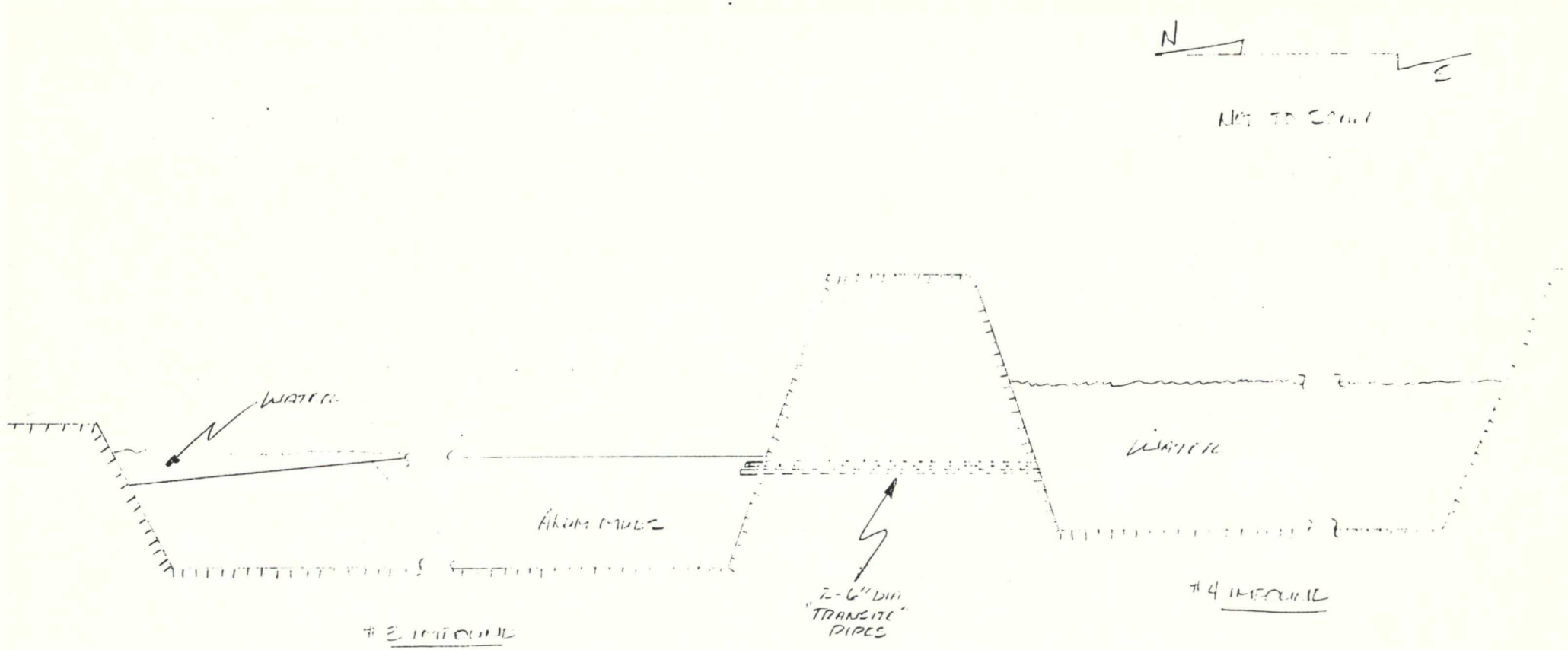
Sincerely,

Edward C Talbott

Edward C. Talbott
Millwright, American Cyanamid
Joliet Plant



SKETCH - IMPOUND PROFILE



SKETCH - IMPOUND PROFILE

Field Operations Section

File AMERICAN CYANAMID Region II MAYWOOD Basin Dupage / Des

Reported by Bill Burns Received By J. Patel Date & Time 11-2-81 1.40. P.

Address 1306 McKinley Ave. JOLIET.

Phone #(815)-722-6671

		Notified	Date & Ti
FOS	217/782-5620		
EAC	217/782-3637		
USEPA - C	312/353-6188		
E	812/464-2166		
M. & M.	217/782-6791		
D. of fish	217/782-6424		
U.S.C.G.	800/424-8802		
Other			

Material Spilled ALUM-MUD

Quantity Approx. 2400 LBS.

Date & Time 11-1-81 Sunday 10.00 A.m

Effect on Stream

Not Any Significant —

Water turned cloudy — WHITE ppt. in Cre

Source American Cyanamid Source Official & Title Bill Burns; Plant Sup

Address JOLIET ILL. Telephone # (815)-722-66

County WILL IWP Range

Stream or Lake Sugar Creek

RECEIVED
Field Operations Section
NOV 4 1981
Environmental Protection Agency
State of Illinois

Directions

Bill Burns, plant supt. Of American Cyanamid reported following info. of spill on ph

Action Taken & Comments On Sunday (11/1) Approx. 10.00 A.m. Impound Discharge line got ruptured

- Alum-mud spilled outside The Impound.
- By 11.30 A.m. Impound and plant creek were dammed to prevent further discharge into The Sugar Creek.
- Discharge was continuous for about 1½ hour (10.m To 11.
- Approx. 4200 lbs of Alum.mud was reported, left the property.
- plant creek runs North to South. About 1" layer of Alum-mud is still in The Plant Creek. Plant creek runs into Sugar Creek. At present Plant creek is dam
- Evidence of Alum-mud in Sugar Creek —
- Water is cloudy —

Signed Rhonda Pate

WPC-165(1/76) I asked facility representative to send in